5 DETECTION OF FECAL MATERIAL

5.1 EDELMAN'S TEST (Reference 12, pp. 4-7, Appendix A)

5.1.1 Safety Considerations

5.1.1.1 Mercuric chloride - Caution! Very toxic if inhaled or swallowed, or if in contact with skin! Poisonous! Dangerous! May be fatal!

5.1.1.2 Zinc chloride - Caution! Corrosive!

5.1.1.3 Amyl alcohol (isopentyl alcohol) - Caution! Harmful if swallowed or inhaled! Irritant! Combustible!

5.1.2 Equipment

5.1.2.1 Scissors

5.1.2.2 Tweezers

5.1.2.3 Centrifuge

5.1.2.4 Long wavelength ultraviolet light source

5.1.2.5 Vortex

5.1.3 Materials

5.1.3.1 Disposable pipets

5.1.3.2 Test tubes and/or microcentrifuge tubes

5.1.4 Reagents

5.1.4.1 10% Saturated mercuric chloride solution (1 g in 10 ml of 95% ethanol)

5.1.4.2 10% Saturated zinc chloride solution (1 g in 10 ml of 95% ethanol)

5.1.4.3 Amyl alcohol (isopentyl alcohol)

5.1.4.4 Distilled water

5.1.4.5 Positive control (known feces)

5.1.5 Storage

5.1.5.1 The 10% saturated solutions of mercuric chloride and zinc chloride are stable at room temperature.

5.1.6 Labeling

5.1.6.1 Label each bottle with the contents and lot number (date of preparation followed by the initials of person preparing the solution).
Example: 10% saturated zinc chloride solution Lot Number 100899JD was prepared by Jane Doe on October 8, 1999.

5.1.6.2 There is no expiration date (see 5.1.7 Minimum Standards and Controls).

5.1.7 Minimum Standards and Controls

5.1.7.1 A positive reagent control (known fecal stain), and a substrate control (when available) must be tested and results documented in the case file. If a substrate control is not available, distilled water will be used as a negative control. If the stain is on a cotton swab, it is not necessary to test a substrate control. It is not necessary to test submitted control swabs.

5.1.8 Edelman's Test Procedure

5.1.8.1 To prepare an extract of the stain, place an approximate ½ cm^2 piece of suspected fecal stain and controls in appropriately labeled test tubes or microcentrifuge tubes, add a minimum of 3 drops of distilled water to each tube (use only the amount of distilled watr necessary to saturate the stain) and leave at room temperature for at least 15 minutes.

5.1.8.2 Remove the material and add a minimum of 3 drops of 10% saturated zinc chloride solution to the extract.

5.1.8.3 Add 5 drops of amyl alcohol (isopentyl alcohol) to the extract and vortex.

5.1.8.4 Centrifuge for 5 minutes. Pipet the supernatant layer into an appropriately labeled test tube.

5.1.8.5 Add 3 drops of 10% saturated mercuric chloride solution.

5.1.8.6 Observe color changes in both white and ultraviolet light. Document results. If urobilin is present the solution may become rose-pink, but will show a crab apple green fluorescence under long wave ultraviolet light.

5.1.8.7 All controls must give the expected results before a conclusion can be reached on an unknown sample. When all controls work properly and a positive reaction is observed for the unknown sample, feces is indicated to be present.

5.1.8.8 Interpretation

5.1.8.8.1	Positive Reaction =	Crab apple green fluorescence under long wave ultraviolet light
5.1.8.8.2	Negative Reaction =	No green fluorescence under long wave ultraviolet light
5.1.8.8.3	Inconclusive Reaction =	No green fluorescence of the positive control under long wave ultraviolet light and/or substrate control exhibits crab apple green fluorescence under long wave ultraviolet light

5.1.8.9 Reporting Results

5.1.8.9.1 Report positive test results as “Fecal material was indicated…”

5.1.8.9.2 Report negative test results as “No fecal material was detected…”

5.1.8.9.3 Report inconclusive test results as “The test for fecal material was inconclusive…”

♦END